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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,699	10/11/2001	Mikhail Boroditsky	03493.00309	6297
22907	7590	09/08/2004	EXAMINER	
BANNER & WITCOFF 1001 G STREET N W SUITE 1100 WASHINGTON, DC 20001			PAYNE, DAVID C	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/973,699

Applicant(s)

BORODITSKY ET AL.

Examiner

David C. Payne

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 October 2001.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-37 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 12 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/11/2001.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Milton 6529300 B1 (Milton).

Re claim 1 Milton disclosed

A system for providing high connectivity communications over a packet-switched optical ring network comprising: a core optical ring having at least one node, said node being coupled to a subtending system by an optical crossbar switch; a tunable laser for generating a set of serial packets; a stacker for forming a first composite packet from said set of serial packets, said stacker coupled to said optical crossbar switch, and said stacker further coupled to said tunable laser; said first composite packet being parallel packets in a single photonic time slot, said first composite packet to be added to said core optical ring in a vacant photonic time slot via said optical crossbar switch; a second composite packet propagating on said core optical ring destined to be dropped at said node for further distribution on said subtending system via said optical crossbar switch; an unstacker for serializing said second

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composite packet dropped at said node, said unstacker coupled to said optical crossbar switch; and a detector for distributing said serialized packets to a further destination by said subtending system.

(Figures 4, 7, 8, 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10, 9/5-15)

Re claim 2 Milton disclosed wherein said stacker and said unstacker form a single interleaved device sharing some components.

(Figures 4, 7, 8, 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10, 9/5-15)

Re claim 3 Milton disclosed wherein wherein each of said serial packets of said set of serial packets generated by said tunable stacker are at a different wavelength. (Figures 4, 7, 8, 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10, 9/5-15)

Re claim 4 Milton disclosed wherein wherein said stacker further comprises: an optical circulator; and a plurality of Fiber Bragg Gratings (FBG), one FBG for each wavelength that said tunable laser generates. (Figures 4, 7, 8, 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10, 9/5-15)

Re claim 5 Milton disclosed wherein wherein each parallel packet of said composite packet is at a different wavelength. (Figures 4, 7, 8, 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35,

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4/45-60, 6/30-55, 7/1-10,9/5-15)

Re claim 6 Milton disclosed wherein wherein said unstacker further comprises: an optical circulator; and a plurality of FBGs, one FBG for each wavelength that said unstacker is capable of receiving in said second composite packet. (Figures 4, 7, 8 , 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-15)

7. The system according to claim 2, wherein said stacker-unstacker combination device is formed by a pair of WDMs. (Figures 4, 7, 8 , 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-15)

Re claim 8 Milton disclosed wherein wherein a pair of mirrors is interposed on each line between each WDM of said WDM pair. (Figures 4, 7, 8 , 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-15)

Re claim 9 Milton disclosed wherein The system according to claim 1, wherein said optical crossbar switch is a 2.times.2 switch. (Figures 4, 7, 8 , 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-15)

Re claim 10 Milton disclosed wherein wherein said optical crossbar switch is a n.times.n switch. (Figures 4, 7, 8 , 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-15)

Re claim 11 Milton disclosed wherein wherein said stacker is a WDM, and further wherein said WDM forms said first composite packet by feeding output lines back into said WDM itself. (Figures 4, 7, 8 , 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-15)

Re claim 12 Milton disclosed wherein wherein said unstacker is a WDM, and further wherein said WDM serializes said second composite packet by feeding output lines back into said WDM itself. (Figures 4, 7, 8 , 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-15)

Re claim 13 Milton disclosed A system for providing high connectivity communications over a packet-switched optical ring network comprising: a core optical ring having at least one node, said node being coupled to a subtending system by an optical crossbar switch; a device for forming a first composite packet formed by a set of packets generated in parallel by an array of lasers, said device coupled to said optical crossbar switch; said first composite packet being parallel packets in a single photonic time slot, said first composite packet to be added to said core optical ring in a vacant photonic time slot via said optical crossbar switch; a second composite packet propagating on said core optical ring destined to be dropped at said node for further distribution on said subtending system via said optical crossbar switch; an unstacker for serializing said second composite packet dropped at said node, said unstacker coupled to said optical crossbar switch; and a detector for distributing said

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serialized packets to a further destination by said subtending system. (Figures 4, 7, 8, 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-15)

Re claim 14 Milton disclosed A system for providing high connectivity communications over a packet-switched optical ring network comprising: a core optical ring having at least one node, said node coupled to a subtending system by an optical crossbar switch; a plurality of composite packets propagating on said core optical ring, wherein at least one of said composite packets is not destined for further distribution on said subtending system so passes through said optical crossbar switch, said optical crossbar switch flipped in a bar state, and further wherein another at least one of said composite packets is destined for further distribution on said subtending system so is dropped onto said subtending system by flipping said optical crossbar switch into a cross state; and another composite packet is formed by a device coupled to an optical crossbar switch, said another composite packet is to be added to said core optical ring in a vacant photonic time slot by flipping said optical crossbar switch into said cross state. (Figures 4, 7, 8, 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-15)

Re claims 15 and 16 Milton disclosed wherein said at least one composite packet to be dropped from said core optical ring occurs at the same time as the composite packet to be added to said core optical ring. (Figures 4, 7, 8, 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-15)

Re claim 17 Milton disclosed A system for accomplishing transparent bypass over a high connectivity communications packed-switched optical ring network comprising: a core optical ring with at least one node, said node having an optical crossbar switch, said optical crossbar switch coupled to a subtending system; a first composite packet propagating on said core optical ring, said first composite packet being destined for distribution on said subtending system, said first composite packet being dropped via said optical crossbar switch in a cross state; and a first WDM coupled to said optical crossbar switch for receiving said first composite packet, and for filtering and separating wavelengths comprising said first composite packet into wavelengths destined for distribution on said subtending system and wavelengths not destined for further distribution on said subtending system, and said first WDM further serializing and outputting packets at the wavelengths destined for distribution on said subtending system, said first WDM forwarding packets at wavelengths not destined for further distribution on said subtending system to a second WDM for outputting back onto said core optical ring via said optical crossbar switch in said cross state. (Figures 4, 7, 8 , 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-15)

Re claim 18 Milton disclosed wherein a second composite packet to be added to said core optical ring is created and interleaved with said packets, not destined for further distribution on said subtending system, prior to outputting said packets, not destined for further distribution, back onto said core optical ring. (Figures 4, 7, 8 , 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-15)



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Re claim 19 and 32-37 Milton disclosed

A system for accomplishing transparent bypass over a high connectivity communications packet-switched optical ring network comprising: a core optical ring having at least one node, said node having an optical crossbar switch; a first composite packet comprising a plurality of parallel packets in a single photonic time slot propagating on said core optical ring; a first portion of said plurality of parallel packets destined for further distribution on a subtending system coupled to said optical crossbar switch; a second portion of said plurality of parallel packets to be passed through and output back onto said core optical ring; a plurality of three and four port circulators coupled to said optical crossbar switch; and a plurality of Fiber Bragg Gratings (FBGs) coupled to and sandwiched between said plurality of three- and four-port circulators, wherein the first portion of said plurality of parallel packets are serialized and further distributed, and said second portion of said plurality of parallel packets are passed through said plurality of three- and four-port circulators and said plurality of FBGs and output back onto said core optical ring. (Figures 4, 7, 8, 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-15)

Re claim 20 Milton disclosed The system according to claim 17, wherein a second composite packet to be added to said core optical ring is created, said second composite packet is interleaved with said second portion of said plurality of parallel packets prior to outputting said second portion of said plurality of parallel packets back onto said core optical ring. (Figures 4, 7, 8, 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-

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15)

Re claim 21 Milton disclosed A system for providing high connectivity communications over an optical ring network comprising: a core optical ring having at least one node, said node being coupled to a subtending system by an optical crossbar switch; a source for generating a set of serial packets; a stacker for forming a first composite packet from said set of serial packets, said stacker coupled to said optical crossbar switch, and said stacker further coupled to said source; said first composite packet being parallel packets in a single photonic time slot, said first composite packet to be added to said core optical ring in a vacant photonic time slot via said optical crossbar switch; a second composite packet traveling around said core optical ring destined to be dropped at said subtending system for further distribution via said optical crossbar switch; and an unstacker for serializing said second composite packet dropped at said subtending system, said unstacker coupled to said optical crossbar switch.

(Figures 4, 7, 8 , 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-

15)

Re claim 22 Milton disclosed wherein said source for generating a set of serial packets is a tunable laser. (Figures 4, 7, 8 , 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10,9/5-15)

Re claim 23-31Milton disclosed

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further comprising: a control channel to provide enhanced services including packet formation, packet insertion, packet extraction and optical crossbar switch control. (Figures 4, 7, 8, 13, e.g., col./lines : 2/20-35, 3/50-67, 3/23-35, 4/45-60, 6/30-55, 7/1-10, 9/5-15)

### ***Conclusion***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (571) 272-3024. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dcp



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Patent Examiner  
AU 2633